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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668.927	09/23/2003	Ian Moore	WGEC-0014	3327

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EXAMINER

SIEVERS, LISA C

ART UNIT PAPER NUMBER

2863

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/668,927	Applicant(s) MOORE, IAN	
	Examiner Lisa C. Sievers	Art Unit 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01222004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figures 1 and 3 are objected to because of the following informalities:

1. Figure 1 is objected to under 37 CFR 1.84(i) because the words do not appear on a horizontal, left-to-right fashion when the page is either upright or turned so that the top becomes the right side.
2. Figure 3 is objected to because, likewise in the specification, there are no written descriptions for the various depths shown. It is unclear which horizontal line represents the water surface and which horizontal lines represent rock interfaces as opposed to depths where the source and receiver simply reside. Descriptions for the various depths shown as well as labels for the grid axes are suggested.
3. Figure 3 is objected to. A second marker corresponding to Y_2 should be shown between lines 350 - 360, just below the first marker.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

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Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

4. The abstract of the disclosure is objected to because it contains more than 150 words. See MPEP § 608.01(b).
5. A grammatical error is noted on page 13, line 20 of the specification: “is not be applied.”
6. On page 11, line 4 and page 13, line 23 of the specification, aperture is given reference numeral 300. This should be changed to 330.
7. On page 11, lines 5 – 6, the method includes selecting a point on another locations-for-X line [360]. On page 9, lines 12 – 14, a point selected along a locations-for-X line [340] is described as corresponding to a potential downward reflection point (defined on page 4 of the specification as a point on the water surface at which a wave is reflected downward) for the surface multiples of trace (S, R). As shown in figure 3, points along the new locations-for-X line [360] do not meet this criteria as the line [360] is several levels below the surface of the water, presumed to be line [340].

Appropriate correction is required.

Claim Objections

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Claims 1, 9, 12, 13, 15, 17, 18 and 23 are objected to because of the following informalities:

8. Claims 1 and 17 are objected to because it is not clear where the line, in step (c), is located with respect to another entity. It is suggested that "a line twice the distance between the input subsurface line and the target subsurface line" be changed to "a line twice the distance from the target subsurface line to the input subsurface line."

9. Claims 1 and 17 are objected to because, in step (e), it is not clear how points on the line are selected or when point selection discontinues.

10. Claims 9, 13, 15 and 18 are objected to because it is not clear if "plurality of subsurface lines" refers to target subsurface lines or input subsurface lines.

11. Claims 12 and 23 recite the limitation, "multiple contribution gather." There is insufficient antecedent basis for this limitation in these claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 1 - 23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

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Claims 1 - 23 do not produce any tangible results. The practical application of the claimed invention cannot be realized until the information determined is conveyed to the user. For the result to be tangible, it would need to be output to a user or displayed to a user or stored for later use.

For further guidance, applicant is referred to the October, 2005 O.G. Notice available at the PTO internet site:

<http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bevc et al. (6625543 B1) teaches a method and computer readable medium (Bevc et al. (6625543 B1), col. 10, claims 15 and 16) for rearranging seismic data comprising: selecting input and output locations (source/receiver pairs) within an aperture (Bevc et al. (6625543 B1), col. 3, line 44; col. 5, lines 41 – 51); generating a contribution of each input trace along a summation trajectory to the output trace (Bevc et al. (6625543 B1), col. 9, claim 1); and applying a normal moveout correction to the input data (Bevc et al. (6625543 B1), col. 5, lines 6 – 7).

Pann (4887243) teaches a method for predicting a plurality of surface multiples for a plurality of traces in a record of seismic data, comprising: selecting a target subsurface line (line along path from S to R, Pann (4887243), figure 5, [60]); selecting a point on a line wherein the point corresponds to a potential downward reflection point of the surface multiples for a trace in the record (Pann (4887243), col. 6, lines 60 – 64); generating a potential surface multiple for the trace corresponding to the point (Pann (4887243), col. 4, lines 66 – 68; col. 5, lines 1 – 2); performing the steps iteratively for each point on the line to generate an inline of potential surface multiples for the trace

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corresponding to each point on the line (Pann (4887243), col. 6, lines 19 – 23); and adding the plurality of potential surface multiples corresponding to each point in order to generate a surface multiple for the trace (Pann (4887243), col. 5, lines 59 – 65). Pann (4887243) also teaches a method for predicting a plurality of surface multiples for a plurality of traces in a record of seismic data, comprising: selecting a target subsurface line (line along path from S to R, Pann (4887243), figure 5, [60]); generating a sum of a plurality of potential surface multiples on a line in each multiple contribution gather that corresponds to the target subsurface line (Pann (4887243), col. 6, lines 49 – 53); and adding adjacent potential surface multiples corresponding to the trace to generate a surface multiple for the trace (Pann (4887243), figures 3 and 4).

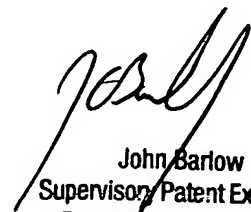
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa C. Sievers whose telephone number is (571) 272-8052. The examiner can normally be reached on M-F, 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LCS

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